

Computer/ Technology Skills



Standard Course of Study and Grade Level Competencies K-2

**Public Schools of North Carolina
Department of Public Instruction**

TABLE OF CONTENTS

Acknowledgements.....	3-4
Preface.....	5-7
Philosophy.....	8-9
Organization of Curriculum.....	10-11
Kindergarten	13-14
Grade 1	15-16
Grade 2.....	17-18
<i>NETS*S Profiles of Technology Literate Student</i> by end of Grade 2	19
Glossary	20-27
Bibliography	28

K-12 Computer/Technology Skills

ACKNOWLEDGMENTS

The North Carolina Department of Public Instruction gratefully acknowledges the cooperation and assistance provided by individuals and groups throughout the state in the current revision process. Without such cooperation, the revision of the *K-12 Computer/Technology Skills Standard Course of Study* would not have been possible.

We wish to express special thanks to the Computer/Technology Skills Core Revision Committee for providing the leadership and vision that guided the development of these materials. The untiring efforts of the members of this group contributed greatly to the completion of this task:

- Patsy Hester, Instructional Technology Coordinator, Wake County Public Schools
- David Warlick, Parent, Wake County
- Barbara Taylor, Associate Professor, Computing Services, Elon University
- Christopher Cobitz, Director of Technology, Thomasville City Schools
- Julie Noland, Technology Coordinator, Haywood County Schools
- Janet McLendon, Instructional Technology Facilitator, Carteret County Schools
- Gail Morse, Technology Coordinator, Durant Road Middle School, Wake County Public Schools
- Lisa Locklear, 8th Grade Teacher, Brunswick County Schools
- Beckey Reed, Technology Outreach, North Carolina State University
- Amy Washburn, Director of Technology, Union County Schools
- Carrie Kirby, Instructional Technology Facilitator, Transylvania County Schools
- David Kafitz, Assistant Principal Middle School, Buncombe County Schools
- Campbell Price, Instructional Technology Consultant, South Central Region, NCDPI
- Mary Lou Daily, Instructional Technology Consultant, Western Region, NCDPI
- Acacia Dixon, Instructional Technology Consultant, Eastern Region, NCDPI
- Annemarie Timmerman, Instructional Technology Consultant, North Central Region, NCDPI
- Donald Carter, Early Childhood Consultant, NCDPI
- Eva Phillips, Early Childhood Consultant, NCDPI
- Fran Hoch, Section Chief, Second Languages/ESL/Information and Computer Skills/Arts Education and Healthful Living, NCDPI
- Martha Campbell, Information Skills/Computer Skills Consultant, NCDPI
- Educators statewide who participated in the current revision process by working with the Core Committee by responding to surveys, and attending focus group sessions and reacting to draft documents.

- The faculty from institutions of higher education who advised the staff and assisted in the revision of curriculum.
- Those who participated in public hearings.
- The Raleigh-based staff in Arts Education, Early Childhood Education, English Language Arts, Instructional Technology, Mathematics, Science, Second Languages, Social Studies, Testing and Accountability, and Workforce Development.
- The office support staff who provided assistance to the committee.
- The Developers of the *ISTE National Educational Technology Standards for Students (NETS*S)* for permission to use the Profiles of a Technology Literate And NETS*S Goals in this document.¹
- The Division of Communications Services for technical assistance in the editing and formatting this publication.

The current revision process involved on some level the entire education community, and its end product is a North Carolina curriculum of which the state can be justifiably proud. We will continue to revise and improve the Standard Course of Study to meet the needs of the children of North Carolina.



¹ Reprinted with permission from *National Education Technology Standards for Students - Connecting Curriculum and Technology*, copyright (c) 2000, ISTE (International Society for Technology in Education), 1.800.336.5191 (U.S. & Canada) or 1.541.302.3777 (Int'l), iste@iste.org, www.iste.org. All rights reserved. Permission does not constitute an endorsement by ISTE.

Preface

General Principles

The *Computer/Technology Skills Standard Course of Study* describes the progressive development of knowledge and skills in six strands: Societal and Ethical Issues, Database, Spreadsheet Keyboard Utilization/Word Processing/Desktop Publishing, Multimedia/Presentation, and Telecommunications/Internet.

- In the primary grades, the objectives focus on the essential skills.
- In the upper elementary and middle grades, the objectives build upon and reinforce those skills through application and use in content area assignments/projects. During the eighth grade, students should be prepared to successfully pass the computer proficiency assessment required for graduation.
- In grades 9-12, the objectives focus on the application, refinement, and transfer of knowledge and skills to be used in content area assignments, in preparation for work, continued learning, and personal use. Objectives at these grade levels are organized by subject area, allowing students to employ, expand, and internalize the proficiencies they have already developed.

Revision Process

The revision process began in August 2002. North Carolina educators, through an online discussion forum, survey, focus groups, and teleconference, evaluated the *Computer/Technology Skills Standard Course of Study*. The Computer/Technology Skills Core Revision Committee reviewed the input and recommended that revisions be made. At its October 2002 meeting, the State Board of Education approved a revision of the telecommunications strand, with particular emphasis on personal safety and responsible and ethical behavior in the use of technology resources and information.

From October 2002 until the present the Computer/Technology Skills Core Revision Committee has been working on the revision of the *K-12 Computer/Technology Skills Standard Course of Study*. Educators from across the state have provided input and feedback to draft documents 1-10 in a variety of ways:

- Online surveys (467 responses)
 - Focus group sessions (24 sessions with 565 participants)
 - Public hearing November 24, 2003, Raleigh
 - Formal/informal sessions (ongoing)
 - Drafts of the *K-12 Computer/Technology Skills Standard Course of Study* document were posted on the Instructional Services website beginning in September 2002 to the present
-

<http://www.learnnc.org/dpi/instserv.nsf/8b9d5b45cd868314052564e5005703ff/7b55e0789abb9ca585256dc1005c7833?OpenDocument>

- Quicktopic Discussion Forum has been available for all who wanted to participate in the on-going discussion. URL
<http://www.quicktopic.com/13/H/PPsX64g6eUmH/p-1.-1>

Focus Groups () indicates number of events in a given location

- Technology Coordinators, Wake County Public Schools (2)
- MEGA Meeting, Leesville Middle School, Wake (1)
- NCAECT Conference (2)
- SW RESA Elem. Supervisors (1)
- SW RESA, Middle School & High School Coordinators (1)
- Kenansville/Duplin ENTech Center (1)
- Southeastern Region Teaching & Technology Conference, Greenville (1)
- Williamston/Martin ENTech Center (1)
- Moore ENTech Center (1)
- Technology and Learning Seminar, UNCG (1)
- Western Region Meeting (3)
- Northeast Region, Guilford (1)
- Eastern Regional, Bertie (1)
- Southwestern Region, Albemarle (1)
- Nortel Networks Focus Group, RTP (1)
- Public Hearing, Raleigh (1)
- NC Educational Technology Conference, Focus Group, Greensboro (2)

**Input/
Suggestions
And Concerns**

Suggestions and input provided to the Computer/Technology Skills Core Revision Committee from teachers, administrators, parents, business, and community were the following:

- Make objectives clear.
- Make organization of document clear and easy to use.
- Provide sample activities for each objective by grade level.
- Write objectives in language to encourage integration into content areas.
- Encourage collaboration among all classroom teachers, computer coordinators, media coordinators to support instructional use of technology.
- Focus attention on Copyright Law and Acceptable Use Policy/Internet Use Policy (AUP/IUP) issues.
- Telecommunications/Internet includes tools for collaboration.
- Align document to *National Educational Technology Standards for Students*.
- Identify terms/concepts.

All suggestions were discussed, reviewed, and incorporated into draft documents by the Core Revision Committee.

**Revisions
to Document**

Societal/Ethical Issues Strand

- Respect for the work of others – security, privacy, passwords, personal
-

**Revisions
to Document
Con't.**

information.

- Responsible, safe and ethical behaviors online.
- Trouble-shooting common hardware/software problems/issues.

Telecommunications/Internet Strand

- Safe, responsible, and ethical behavior online.
- Evaluating quality of resources and information online
- Collaborative tools.
- Advantages and limitations of collecting/disseminating information/ideas online.

Multimedia/Presentation Strand

- Personal Safety Issues – when developing, selecting, and using personal information, images, and content in presentations/online.
-

Features

This SCS is based on the 1998 *K-12 Computer/Technology Skills Standard Course of Study*. Four of the six topic strands address objectives from the 1998 document using precise language with examples. The Societal/Ethical Issues and Telecommunications topic strands have been refined and enhanced.

- Objectives are stated in clear, precise language.
 - Terms/concepts are identified in objectives.
 - Organization of document is clear and easy to use (Matrices/charts).
 - Objectives encourage integration with content areas at all levels.
 - Encourages collaboration among all classroom teachers, computer coordinators, media coordinators to support instructional use of technology,
 - Focuses on personal safety, ethical use of resources and information-- Copyright Law and (AUP/IUP) issues.
Encourages use of Telecommunications/Internet collaboration tools.
 - Aligns *North Carolina Computer/Technology Skills Competency Goals* with *National Educational Technology Standards for Students (NETS*S)* and *profiles of Technology Literate Students* by end of grade 2, 5, 8, and 12.²
 - Each Strand follows the same pattern from grade to grade. See **Chart A** on page 7A
-

² Reprinted with permission from *National Education Technology Standards for Students - Connecting Curriculum and Technology*, copyright (c) 2000, ISTE (International Society for Technology in Education), 1.800.336.5191 (U.S. & Canada) or 1.541.302.3777 (Int'l), iste@iste.org, www.iste.org. All rights reserved. Permission does not constitute an endorsement by ISTE.

Philosophy

The strength of technology is that it provides an excellent platform where students can collect information in multiple formats and then organize, link, and discover relationships between facts and events. An array of tools for acquiring information and for thinking and expression allows more students more ways to enter the learning enterprise successfully and to live productive lives in the global, digital, and information-based future they all face.³

The *K-12 Computer/Technology Skills Standard Course of Study* identifies the essential knowledge and skills that all students need to be active, lifelong learners in a technology intensive environment. Technology is undergoing rapid change, and new and improved technological advances appear almost daily. The curriculum is designed to form the foundation for continuous learning and to be applicable to ever-changing innovations.

In 1995, the State Board of Education published *The New ABCs' of Public Education*, its plan for restructuring education in our state. The B in the *ABCs'* focuses instruction on the basics—specifically the mastery of reading, mathematics, and writing. Computer/technology skills represent a new “basic”. When integrated with the core curricular areas, these skills enable students to improve and enhance their learning of the other basic skills.⁴

The *Computer/Technology Skills Standard Course of Study* involves the development of skills over time. Computer/Technology Skills proficiency is not an end in itself, but lays a foundation for lifelong learning. These skills become building blocks with which to meet the challenges of personal and professional life. To become technologically proficient, the student must develop the skills over time, through integrated activities in all content areas K-12, rather than through one specific course. These skills are necessary for all students and should be introduced and refined collaboratively by all K-12 teachers as an integral part of the learning process.

Chart B illustrates the alignment of North Carolina K-12 Computer/Technology Skills Competency Goals and how they relate to the *ISTE National Educational Technology Standards for Students (NETS*S)*. See **Chart B** on page 9.

³Statham, Dawn S., and Torell, Clark R. *Computers in the Classroom: The Impact of Technology on Student Learning*, Boise State University College of Education, p. 10.

⁴ *The New ABC's of Public Education*, May, 1995., p. 5

Chart B

North Carolina Competency Goals	<i>ISTE National Educational Technology Standards for Students NETS*S</i>
COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.	1. Basic operations and concepts <ul style="list-style-type: none"> • Students demonstrate a sound understanding of the nature and operation of technology systems. • Students are proficient in the use of technology.
	2. Social, ethical, and human issues <ul style="list-style-type: none"> • Students understand the ethical, cultural, and societal issues related to technology. • Students practice responsible use of technology systems, information, and software. • Students develop positive attitudes toward technology uses that support lifelong learning, collaboration, personal pursuits, and productivity.
COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.	3. Technology productivity tools <ul style="list-style-type: none"> • Students use technology tools to enhance learning, increase productivity, and promote creativity. • Students use productivity tools to collaborate in constructing technology-enhanced models, prepare publications, and produce other creative works.
	4. Technology communications tools <ul style="list-style-type: none"> • Students use telecommunications to collaborate, publish, and interact with peers, experts, and other audiences. • Students use a variety of media and formats to communicate information and ideas effectively to multiple audiences.
COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.	5. Technology research tools <ul style="list-style-type: none"> • Students use technology to locate, evaluate, and collect information from a variety of sources. • Students use technology tools to process data and report results. • Students evaluate and select new information resources and technological innovations based on the appropriateness for specific tasks.
	6. Technology problem-solving and decision-making tools <ul style="list-style-type: none"> • Students use technology resources for solving problems and making informed decisions. • Students employ technology in the development of strategies for solving problems in the real world.⁵

⁵ Reprinted with permission from *National Education Technology Standards for Students - Connecting Curriculum and Technology*, copyright (c) 2000, ISTE (International Society for Technology in Education), 1.800.336.5191 (U.S. & Canada) or 1.541.302.3777 (Int'l), iste@iste.org, www.iste.org. All rights reserved. Permission does not constitute an endorsement by ISTE.

Organization of Curriculum

The first separate *Computer Skills Standard Course of Study* was approved by the State Board of Education in 1992. This 2004 revision represents a refinement of the competencies to reflect current technologies and to incorporate future technological developments. The three Competency Goals are unchanged from those adopted for the *1992 Standard Course of Study*. Competency Goals 1 and 2 generally apply in grades K-12. Competency Goal 3 is at the application of skills level and does not apply in grades K-2.

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

This goal addresses the role of technology in society now and in the future. Students must understand the impact of computer technology on information management, job skills needed in the work place, communications, transportation, education, healthcare, and personal information needs. Students must understand issues of personal safety, responsible, and ethical use of technology resources and information. Students must be able to adapt and transfer knowledge and skills. Students must be able to evaluate resources and information for content and usefulness. Students must be able to select and use most appropriate technology tools and resources to meet their needs.

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

This goal is concerned with fundamental computer operations and application software use that make students independent, productive, users of computer technology. Students must master certain computer operations, application software skills, know computer terms and functions, demonstrate basic keyboarding skills, and be able to use software correctly. The application software skills identified include word processing, database management, spreadsheet, multimedia production, and Telecommunications/Internet. Knowledge and skills that can be adapted and transferred as technology changes and evolves overtime.

COMPETENCY GOAL 3: The learner will use a variety of technologies to access, analyze, interpret, synthesize, apply, and communicate information.

This goal focuses on the application of computer/technology skills. Students will access information using search strategies and analyze information using database, spreadsheet, and graphing software. They will then communicate and share findings in a variety of ways (e.g., desktop publishing, multimedia, video-conferencing, telecommunications) with audiences near and far.

The objectives under each of the three goals in the revised K-12 *Computer/Technology Skills Standard Course of Study* describes the progressive development of knowledge and skills in six

strands: Societal/Ethical Issues, Database, Spreadsheet, Keyboard Utilization/Word Processing/Desktop Publishing, Multimedia/Presentation, and Telecommunications/Internet. The number at the end each individual objective denotes the Strand. Each Strand follows the same pattern from grade to grade. See **Chart A** page 7A. In the primary grades, the objectives focus on the essential skills; in the upper elementary and middle grades, the objectives build upon those skills. During the eighth grade, students should be prepared to successfully pass the computer proficiency assessment required for graduation.

It is important to note, however, that they may not have acquired all of the keyboarding proficiency required as a prerequisite for workforce development courses. At grades 9-12, the *Standard Course of Study* focuses on the refinement and application of the acquired computer/technology skills in preparation for work, continued learning, and personal use. The objectives at these grade levels are organized by subject area, allowing students to employ, expand, and internalize the proficiencies that they have already developed.

Instructional Support Materials

Work on integration strategies support materials is in progress. Support materials (e.g., datafiles, activities, resource links) for the revised curriculum will be posted on the *Computer/Technology Skills Instructional Resources* webpage as they are completed. Also this webpage will be linked to materials resident on LEA websites, if permission is granted. This process allows the instructional materials to be dynamic, expandable, monitored, and updated by the original developer as needed.

All materials and resources will be posted on the Instructional Services webpage <http://www.learnnc.org/dpi/instserv.nsf> and the NCDPI Infoweb <http://www.dpi.state.nc.us> as soon as possible.



STANDARD COURSE OF STUDY
K-12 Computer/Technology Skills

Computer/Technology Skills - Kindergarten

Focus Areas

- Parts of the computer and how to operate
- Keyboard familiarity
- Grouping and sequencing
- Respect for the work of others
- Responsible care of resources
- Exploring multimedia
- Observing online resources

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

Objectives:

- 1.01 Identify the computer as a machine that helps people work and play. 1
- 1.02 Identify, discuss, and use common hardware terms/concepts (e.g., CPU, monitor, keyboard, mouse). 1
- 1.03 Identify and discuss correct and responsible use and care of computers and resources (AUP/IUP). 1
- 1.04 Demonstrate respect for the work of others. 1
- 1.05 Identify and discuss common features and functions of computer software (e.g., file, open, save, retrieve, draw). 1
- 1.06 Identify graphing as a tool for organizing information as a class. 3
- 1.07 Identify and discuss terms/concepts such as collect, organize, and classify. 3
- 1.08 Identify basic word processing terms (e.g., file, menu bar, cursor, open, save, print). 4
- 1.09 Identify and discuss characteristics of multimedia (e.g., text, sound, images, color) as a class. 5
- 1.10 Identify and discuss multimedia terms/concepts beginning, middle, and end by arranging pictures in linear/sequential order as class/group. 5
- 1.11 Recognize and discuss responsible use of multimedia resources and why it is important as a class. 5
- 1.12 Discuss ownership of created works as a class/group. 5
- 1.13 Identify and discuss the Internet as a source of information at school and home. 6
- 1.14 Identify and discuss terms/concepts (online, digital information, Internet, links). 6

Computer/Technology Skills - Kindergarten

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Use manipulatives and graphing software to organize and display data as a class. 3
- 2.02 Identify, discuss, and use word processing as a tool to enter letters, numbers and words. 4
- 2.03 Identify, locate and use special keys (e.g., arrow keys, space bar, Shift, Enter/Return, Backspace, Delete), letters, and numbers on the keyboard. 4
- 2.04 Use multimedia software to identify and practice letters, numbers, shapes, and colors as a class/group. 5
- 2.05 Use teacher-selected Internet resources/information to explore, identify, and discuss responsible use as a class activity. 6
- 2.06 Use teacher-selected Internet resources/information to discuss ownership of creative works of individuals/groups/companies as a class activity. 6



Computer/Technology Skills - Grade 1

Focus Areas

- Respecting computer work of others
- Using technology at home and school
- Gathering, organizing, and displaying data
- Using word processing
- Exploring multimedia
- Responsible care of resources
- Observing online resources

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

Objectives:

- 1.01 Identify, discuss, and represent visually uses of technology (e.g., computers, cell phones, digital cameras) at school and home. 1
- 1.02 Identify and discuss physical components of a computing device (e.g., CPU, monitor, keyboard, disk drive, printer, mouse). 1
- 1.03 Recognize and discuss safe and responsible use and care of technology resources ((AUP/IUP). 1
- 1.04 Discuss ownership of computer-created work. 1
- 1.05 Identify graphing as a tool for organizing information. 3
- 1.06 Identify and discuss graphing software terms/concepts (e.g., graph, patterns, display). 3
- 1.07 Recognize the rights of ownership of computer-created work of others. 4
- 1.08 Recognize the characteristics of multimedia (e.g., text, audio, images, video). 5
- 1.09 Identify and discuss multimedia terms/concepts (e.g., slide/card, link/button, text box, navigate, transition) as a class/group activity. 5
- 1.10 Recognize and discuss responsible use of multimedia resources. 5
- 1.11 Recognize, discuss, and cite various types of resources as a class. 5
- 1.12 Identify and discuss terms/concepts (e.g., bookmarks/favorites, information). 6
- 1.13 Identify and discuss ownership of creative work online of individuals/groups/companies and the importance of citing sources as a class. 6

Computer/Technology Skills - Grade 1

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Use common computing devices and resources in class activities. 1
- 2.02 Observe, discuss, and use software to enter, calculate, display data, and interpret results as a class/group. 3
- 2.03 Identify, discuss, and use word processing as a tool to enter numbers, words, and phrases. 4
- 2.04 Identify and use basic word processing terms (e.g., file, open, close, menu bar, save, print). 4
- 2.05 Locate and use letters, numbers, and special keys (e.g., arrow keys, space bar, insert Enter/Return, Backspace, Delete) on the keyboard. 4
- 2.06 Identify, discuss, and use menu/tool bar functions in word processing applications. 4
- 2.07 Use multimedia software to illustrate words/phrases/concepts. 5
- 2.08 Explore Internet resources and information using teacher-created bookmarks/favorites and discuss the variety and types of information found as a class activity. 6
- 2.09 Use teacher-selected Internet resources/information to identify, discuss, and chart elements that make an online resource useful, appropriate, and safe as a class. 6



Computer/Technology Skills - Grade 2

Focus Areas

- Using technology in the community
- Respecting the computer work of others
- Observing online resource
- Using electronic database to locate information
- Responsible care of resources
- Building word processing skills
- Collecting, sorting, and displaying data
- Exploring multimedia tools
- Using drawing tools

Strands: 1= Societal/Ethical Issues; 2 = Database; 3 = Spreadsheet; 4= Keyboard Utilization/Word Processing/Desk Top Publishing; 5 = Multimedia/Presentation; 6 = Telecommunications/Internet

COMPETENCY GOAL 1: The learner will understand important issues of a technology-based society and will exhibit ethical behavior in the use of computer and other technologies.

Objectives:

- 1.01 Identify, discuss and visually represent uses of digital technology in the community (e.g., bar code scanners, handhelds, mobile phones, optical storage devices, GPS's). 1
- 1.02 Demonstrate correct use of common technology terms (e.g., hardware, software, CD, hard drive). 1
- 1.03 Identify and discuss appropriate and safe behaviors online. 1
- 1.04 Recognize individual's rights of ownership of created works. 1
- 1.05 Identify and discuss print and electronic databases (e.g., phone book, automated circulation system, CD-ROM encyclopedias) as a way to collect, organize, and display data. 2
- 1.06 Identify and discuss terms/concepts sort, search/filter, keyword using electronic databases (e.g., automated circulation system, electronic encyclopedias). 2
- 1.07 Identify spreadsheets as a tool to organize, calculate, and graph data to make predictions. 3
- 1.08 Identify and discuss spreadsheet terms/concepts (e.g., sort, classify, line graphs). 3
- 1.09 Recognize an individual's rights of ownership to computer-generated work. 4
- 1.10 Identify and use multimedia terms/concepts (e.g., storyboard, linear/sequential, audio/video clips, images). 5

Computer/Technology Skills - Grade 2

- 1.11 Identify and discuss issues (e.g., personal information, images, appropriateness and accuracy of information) to consider in selection and use of materials for multimedia projects. 5
- 1.12 Identify terms/concepts (e.g., online, browser, navigation, resources, web address, webpage, weblinks). 6
- 1.13 Identify responsible and safe online behavior and discuss why it is important. 6
- 1.14 Identify online resources as the work of individuals/groups/companies and discuss why citing resources is necessary. 6
- 1.15 Identify and discuss telecommunications/Internet as a tool for communication and collaboration as a class. 6

COMPETENCY GOAL 2: The learner will demonstrate knowledge and skills in the use of computer and other technologies.

Objectives:

- 2.01 Recognize, discuss and use the features/functions of computing devices (e.g., creating, retrieving, saving, printing data). 1
- 2.02 Use prepared electronic database (e.g., automated circulation, CD-ROM encyclopedias, NC Wise OWL) as a class/group activity to conduct keyword search/filters to meet information needs. 2
- 2.03 Enter/edit data in a prepared spreadsheet as a class/group and observe the changes that occur to make predictions. 3
- 2.04 Use spreadsheet software in content areas to enter, display, and identify sources of data as a class. 3
- 2.05 Recognize, discuss, and use word processing as a tool to enter/edit, print, and save assignments. 4
- 2.06 Use and discuss basic word processing terms/concepts (e.g., desktop, menu/tool bar, document, text). 4
- 2.07 Identify and use correct finger placement for home row keys. 4
- 2.08 Identify and use menu/tool bar features/functions in word processing documents. 4
- 2.09 Identify and use multimedia tools to combine text and graphics as a class/group assignment. 5
- 2.10 Identify, discuss, and cite resources for a class/group multimedia project.
- 2.11 Modify/edit an existing linear/sequential multimedia story to include student narration as a class/group activity. 5
- 2.12 Use teacher-selected Internet resources to locate, discuss, and compare information about your local community as a class/group. 6

**NETS*S National Educational Technology Standards for Students
Profiles for Technology Literate Students**

**PERFORMANCE INDICATORS FOR TECHNOLOGY—LITERATE STUDENTS
Pre-K-2**

**All students should have opportunities to demonstrate the following performances.
Prior to completion of Grade 2, students will:**

1. Use input devices (e.g., mouse, keyboard, remote control) and output devices (e.g., monitor, printer) to successfully operate computers, VCRs, audiotapes, and other technologies. (1)
 2. Use a variety of media and technology resources for directed and independent learning activities. (1, 3)
 3. Communicate about technology using developmentally appropriate and accurate terminology. (1)
 4. Use developmentally appropriate multimedia resources (e.g., interactive books, educational software, elementary multimedia encyclopedias) to support learning. (1)
 5. Work cooperatively and collaboratively with peers, family members, and others when using technology in the classroom. (2)
 6. Demonstrate positive social and ethical behaviors when using technology. (2)
 7. Practice responsible use of technology systems and software. (2)
 8. Create developmentally appropriate multimedia products with support from teachers, family members, or student partners. (3)
 9. Use technology resources (e.g., puzzles, logical thinking programs, writing tools, digital cameras, drawing tools) for problem solving, communication, and illustration of thoughts, ideas, and stories. (3, 4, 5, 6)
 10. Gather information and communicate with others using telecommunications, with support from teachers, family members, or student partners. (4) ⁶
- () indicates NETS*S Goal(s))
- 3.03 Modify/edit databases to organize, analyze, interpret data, and create reports (e.g., documents, multimedia project, webpages). 2

⁶ Reprinted with permission from *National Education Technology Standards for Students - Connecting Curriculum and Technology*, copyright (c) 2000, ISTE (International Society for Technology in Education), 1.800.336.5191 (U.S. & Canada) or 1.541.302.3777 (Int'l), iste@iste.org, www.iste.org. All rights reserved. Permission does not constitute an endorsement by ISTE.

GLOSSARY

Term	Definition	Grade Levels	Strands
Application/Software	Programs that allow to you accomplish certain tasks such as write letters, analyze numbers, sort files, manage finances, draw pictures, and play games.	K-8	ALL
Arrow keys	The keys on computer keyboard used to move the cursor up, down, left, or right on your screen.	K-8	ALL
AUP Acceptable Use Policy	A set of rules and guidelines that are set up to regulate Internet use and to protect the user.	K-8	SI
CPU (Central Processing Unit)	The main chip that allows computers to do millions of calculations per second and makes it possible for users to write letters and balance your checkbook.	K-8	SI
Cursor	This is where the action is located on your screen, represented by a flashing line. When you type on your keyboard, the information appears at the cursor.	K-8	ALL
Delete	A key used to erase characters.	K-8	DTP
Enter/Return	The key used to begin a new line in a word processor, or to enter information into a spreadsheet. It is the same as clicking OK in a dialog box.	K-8	ALL
Hardware	Part of the computer system such as a keyboard, screen, mouse, joystick, printer, speakers, etc.	K-8	ALL
Keyboard	The hardware device used to enter letters into the computer.	K-8	ALL
Monitor	The device with a screen used to show computer images.	K-8	SI
Mouse	A tool used to move the cursor and pointer around the screen.	K-8	SI
Multimedia	To use a combination of text, pictures, sounds, movies, and/or animation in a presentation.	K-8	MM
Numeric Keypad	The portion of a keyboard, set up like an adding machine or calculator used to enter numbers and equations quickly into the computer.	K-8	ALL
Online Safety	Precautions taken to protect personal information and images from being misused by others.	K-8	SI
Password	A code for the security protection to allow access to a computer or the computer programs.	K-8	SI
Printer	A hardware device used to make a paper copy of what is created on the computer.	K-8	SI
Software/Application	Programs that allow you to accomplish certain tasks such as write letters, analyze numbers, sort files, manage finances, draw pictures, and play games.	K-8	ALL

Term	Definition	Grade Levels	Strands
Stand Alone Computer	A computer that does not rely upon any other computer or server to work.	K-8	SI
Text	Words on a page.	K-8	ALL
Vandalism	The intentional act of destroying computer files or computer networks.	K-8	SI
Highlight or Select	To choose part of a document by clicking and dragging over it with the mouse to highlight the text.	1-8	DTP
Internet	Term given to the network of computers that provide information world-wide.	1-8	T
Select or Highlight	To choose part of a document by clicking and dragging over it with the mouse to highlight the text.	1-8	DTP
Word processing	Using keyboarding skills to produce documents such as letters, reports, manuals, and newsletters.	1-8	DTP
Bar graph	One type of graph developed from spreadsheet data that uses parallel bars to compare data and changes in data over time.	2-8	SS
Button bar	A horizontal strip of buttons near the top of a window. It provides shortcuts for commonly used commands. Some programs let you choose to hide or display the button bar, and mix and match buttons to customize a button bar. Also known as a toolbar.	2-8	ALL
Buttons	A hot spot used in multimedia applications to navigate from one place to another or to activate elements (e.g., sound, movies, animation).	2-8	MM
Chart	A way to present information from a spreadsheet in the form of graphs or tables.	2-8	SS
Clip art	Drawings you can add to your documents or presentations. Clip art includes items such as cartoons, maps, symbols, and flags. Some software packages include clip art. Clip art can be purchased separately.	2-8	DTP
Database	Software application that helps manage large collections of information. A simple database might be a single file containing many records, with the same set of fields. Data can be sorted and searched by one or more criteria.	2-8	DB
Desktop	The background on the windows, menus, and dialog boxes on a PC. It is supposed to represent a desk.	2-8	ALL
Desktop publishing	Using features of word processing/DTP software to format and produce documents, letters, reports, flyers, and newsletters with graphics.	2-8	DTP
Graph	A picture shows the relationship of one or more sets of numbers to each other. Some graph types are line, bar, area, and pie graphs.	2-8	SS
Home row	Keys on the keyboard with fingers of the left hand are on A-S-D-F and fingers on the right hand on J-K-L-;	2-8	DTP

Term	Definition	Grade Levels	Strands
Host	The name given to a computer directly connected to the Internet. Host computers are associated with computer networks, online services, or bulletin board systems.	2-8	T
Pictogram	Pictures used to create a bar graph chart	2-8	SS
Print	To put what is on the computer screen on paper. It creates a paper copy of the document created on the computer.	2-8	ALL
Retrieve	Open a saved document.	2-8	DB
Sort	Arranging information in a specific order (usually ascending and descending).	2-8	DB, SS
Storyboard	A graphic organizer used for planning and developing a multimedia report/presentation. The contents, layout, and formatting of each card/slide and the linking together of the cards/slides.	2-8	MM
Telecommunication	The act of sending and receiving information, such as data, text, pictures, voice, and video. The exchange of information can be within a building or around the globe.	2-8	T
Word wrap	This occurs when you get to the end of a line and continue typing the text will then go to the next line.	2-8	DTP
Active cell	The thick-bordered cell where you can enter numbers or formulas in a spreadsheet.	3-8	SS
Alignment	How your text conforms to the left and right margins of a page. The text can be right-aligned, centered, left-aligned, or fully-aligned/justified.	3-8	ALL
Application	Program or software.	3-8	SI
Axis	A feature of a chart, on which you can plot numbers. The horizontal line is called the X-axis, and the vertical line is called the Y-axis.	3-8	SS
Bold	A style of text that makes a letter or word darker and thicker to stand out in a document.	3-8	DTP
Button bar	A little box on your screen that you click on with your mouse to accomplish a task. Most buttons contain small pictures (icons) that display what they do, such as a small printer that can be clicked on to print a document.	3-8	MM, T
Cell	The space at the intersection of a row and column in a spreadsheet.	3-8	SS
Circle graph	A picture showing the relationship of two or more sets of data using a circler.	3-8	SS
Column	The vertical divisions in a spreadsheet that are named with an alphabetical letter	3-8	SS
Copy	To make an exact copy of information in your document, so you can place in order to duplicate it in a new location.	3-8	ALL
Credits	To give reference to the creator and source of the information used in a presentation.	3-8	SI
Edit	To make changes in a document or presentation.	3-8	DTP

Term	Definition	Grade Levels	Strands
Entry bar	The field where information is entered in a spreadsheet.	3-8	SS
Font	The shape and style of text.	3-8	DTP
Freeware	Software written and then donated to the public, so anyone is free to copy it and share it with their friends. This is not the same as shareware or commercial software, which is supposed to be paid for.	3-8	SI
Gif (<i>Graphic Interchange Format</i>)	(Pronounced "jiff.") A file format for pictures, photographs, and drawings that are compressed so that they can be sent across telephone lines quickly. Format widely used on electronic bulletin boards and the Internet and are limited to 256 colors, so they cannot be used for high-end desktop publishing.	3-8	DTP
Graphic	Images/pictures created, edited, and/or published using a computer.	3-8	DTP
Home page	An introductory screen on a web page on the World Wide Web, used to welcome visitors. A home page can include special text or graphics on which you click to jump to related information on other pages on the Web.	3-8	T
Hyperlink or Hypertext	Special text when clicked jumps the user from one related topic to another.	3-8	MM, T
Illustration	Clip art, graphics or drawings on a computer.	3-8	DTP
Indent	To set the first line of a paragraph in from the margin in a word processing document.	3-8	DTP
Jpeg (<i>Joint Photographic Experts Group</i>)	A standard for shrinking graphics so they can be sent faster between modems and take up less space on your hard drive. These graphics can be reduced to 5 percent of their original size, but the image quality deteriorates. However, compressing graphics to 30 or 40 percent of their original size results in minimal loss of quality.	3-8	DTP
Label	The term given to the words entered on a spreadsheet usually naming a column.	3-8	SS
Landscape	The page setup that permits a document to be printed in a horizontal position.	3-8	ALL
Line graph	A graph used to display trends and compare data.	3-8	
Line spacing	The span between lines of text	3-8	DTP
Linear	Moving in a straight line or path; a multimedia presentation that moves in a straight line from image to image.	3-8	MM
Links	Connections that bridge one image, page, or word to another by clicking on a highlighted word or phrase.	3-8	MM, T
Non-linear	Not moving in a straight line or path; a multimedia presentation that transitions from one image to another in an order that is preset, but not necessarily in a straight path - Example: a non-linear presentation can transition from image 1 to image 3 and back to image 1. using menus/branching.	3-8	MM, T
Online Resources	Internet information available to a computer user.	3-8	T

Term	Definition	Grade Levels	Strands
Paste	To insert the last information that was cut or copied into a document. Cut and paste can be used to move information within or between documents.	3-8	ALL
Pie graph	Circle graph divided into pieces that look like portions of a pie.	3-8	SS
Portrait	The default page setup that prints the document vertically.	3-8	ALL
Public Domain	Software written and then donated to the public. Anyone can use and copy public domain software free of charge, but it is not always the same quality as commercial software.	3-8	SI
Row	The horizontal divisions in a spreadsheet named with a number.	3-8	SS
Save	To storing information on a floppy disk, hard drive or CD for later use. Work should be saved often, every 5 or 10 minutes, to make sure your latest changes are safely recorded.	3-8	ALL
Save As	To save a document with a new name.	3-8	ALL
Server	A special computer used to store programs and files, and then sends it out to other computers one or all at a time.	3-8	SI
Shareware	Software that can be tried before you purchase.	3-8	SI
Spreadsheet	An application that can be used to do calculations, analyze and present data. It includes tools for organizing, managing, sorting and retrieving data and testing "what if " statements. It has a chart feature that displays numerical data as a graph.	3-8	SS
Table	Columns and rows of cells that can be filled with text that are used to organize information	3-8	SS
Thesaurus	A feature in most word processors used to replace a word in a document with one that is more suitable and adds variety to your writing.	3-8	DTP
URL Address - Uniform Resource Locator	Website address. Example: http://www.carteretcountyschools.org	3-8	T
Value	The term for a number in a spreadsheet that can be added, subtracted, multiplied or divided.	3-8	SS
Web address	Universal Resource Locator (URL). Example: http://www.carteretcountyschools.org	3-8	T
WWW (World Wide Web)	The section of the Internet that allows access to text, graphics, sound, and even video. A lot of free information can be found on the WWW.	3-8	T
WYSIWYG	WYSIWYG is an acronym for "What You See Is What You Get" and is pronounced "wizzy wig." WYSIWYG simply means that the text and graphics shown on your screen exactly match your printouts.	3-8	T

Term	Definition	Grade Levels	Strands
AND	A way to search for information using the words AND, OR and NOT. Boolean logic was created by English mathematician George Boole 150 years ago.	4-8	DB
Ascending Order	Organizing or sorting information in order from smallest to largest, or A-Z or 1-9	4-8	SS
Calculate	The working of mathematical equations. Formulas that are usually used in spreadsheets allow the computer to automatically perform calculations.	4-8	SS
Descending Order	Organizing or sorting information in order from largest to smallest, Z-A or 9-1	4-8	SS
Domain	The part of an Internet address that identifies where a person's account is located. For example, in the address jdoe@dpi.state.nc.us the domain is everything after the @.	4-8	T
E-mail	Sending and receiving messages through a computer network. This process requires a computer, modem or network connection, and an e-mail address. It is convenient because all messages are sent and received immediately over short or long distances.	4-8	T
Field	A place in a database record where a category of information can be entered or located.	4-8	DB
File	A set of related records in a database	4-8	DB
Format	To set the margins, tabs, font or line spacing in layout of a document.	4-8	DTP
Keyword	A word or reference point used to describe content on a web page that search engines use to properly index the page.	4-8	T
Math Symbols to Use When Searching	Symbols used in a search. >Greater than symbol < Less than symbol used in a search ≥ Greater than or equal to ≤ Less than or equal to ≠ Not equal = Equal	4-8	DB
OR	Formal name given to advanced search strategies using AND, OR and NOT connectors. Boolean logic was created by English mathematician George Boole 150 years ago.	4-8	DB
Page Set Up	The term in reference to the way a document is formatted to print.	4-8	DTP
Record	A collection of related field and entries.	4-8	DB
Search	To look for specific information on the internet or computer.	4-8	DB, T
Search Engines	Software that searches, gathers and identifies information from a database based on keywords, indices, titles and text.	4-8	T

Term	Definition	Grade Levels	Strands
Search Strategies	There are 3 basic ways to begin a search. <ol style="list-style-type: none"> 1. Try to guess at the URL. 2. Use Subject directories provided by some search engines. The selected resources are grouped by subject, categories, and subcategories that can be used for keyword search or to browse the categories. 3. Use a search engine for large searches using unique keywords or combinations of keywords to narrow the search. 	4-8	T
Security	Protection of computer, computer files or a computer network from use without permission of the owner or owners.	4-8	SI
User name	First part of an e-mail address. Example: jmwinton is the user name of the following e-mail address. jmwinton@carteret.k12.nc.us	4-8	T
Animated clip art	A moving clip art graphic.	5-8	DTP
Anti-Virus	An application designed to search for viruses and repair files on a computer.	5-8	SI
Firewall	Technology that prevents users from visiting inappropriate web sites, and protects the network from unauthorized users.	5-8	SI
Hacker	An unauthorized person who secretly gains access to computer files.	5-8	SI
Network	A system of connected computers that allows the sharing of files and equipment. There are two types of networks: local area network (LAN) and wide area network (WAN).	5-8	T
Virus	A computer program designed to damage computer files.	5-8	SI
Worm	A computer file designed to do damage that goes through a computer and possibly a network	5-8	SI
Probeware	Computer assisted data collection tools	6-8	SS

Maran, Ruth. **3D Dictionary (2002)**. MaranGraphics Inc. September 2003.
<http://www.maran.com/dictionary/index.html>

Stewart, Donna. **Kaleidoscope**. NC Wise OWL, North Carolina Department of Public Instruction. (2001). December 2003. <http://www.ncwiseowl.org/kscope/>

Special thanks to Janet McLendon, Instructional Technology Facilitator, Carteret County Schools for permission to reprint glossary and alignment.

Bibliography

Statham, Dawn S., and Torell, Clark R. *Computers in the Classroom: The Impact of Technology on Student Learning*, Boise State University College of Education, p. 10.

The New ABC's of Public Education, May, 1995 p. 5.

Reprinted with permission from National Education Technology Standards for Students - Connecting Curriculum and Technology, copyright (c) 2000, ISTE (International Society for Technology in Education), 1.800.336.5191 (U.S. & Canada) or 1.541.302.3777 (Int'l), iste@iste.org, www.iste.org. All rights reserved. Permission does not constitute an endorsement by ISTE.

Maran, Ruth. **3D Dictionary (2002)**. MaranGraphics Inc. September 2003.

<http://www.maran.com/dictionary/index.html>

Stewart, Donna. **Kaleidoscope**. NC Wise OWL, North Carolina Department of Public Instruction. (2001). December 2003. <http://www.ncwiseowl.org/kscope/>

Special thanks to Janet McLendon, Instructional Technology Facilitator, Carteret County Schools for permission to reprint glossary and alignment.